From: Systematic Review CoP

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Subject: August/September Systematic Review CoP Announcements

Greetings Systematic Review Community of Practice!

Please see below for highlights and announcements from August and September.

August Meeting

Seminar Series 6: Applying Systematic Review under Time Pressure- Dr. Allen Davis and Dr. John Vandenberg

- Allen Davis and John Vandenberg from NCEA discussed the request for correction process for the 2010 IRIS Chloroprene Assessment.
- Slides have been uploaded to our SharePoint site and may be accessed here. The presentation highlighted the importance of taking time to frame a question that will lead to a responsive answer. Once framed, the literature search and screening was rapid, followed by majority of time on key science issues related to the available PBPK models.

September Meeting

Updates on DistillerSR Software- Marc Dufresne and Peter O'Blenis from Evidence Partners

- Slides have been uploaded to our SharePoint site and may be accessed here.

- We have created a DistillerSR resource page on our SharePoint site where you can find more information on this software.

Announcements & Activities

Workshops, Meetings and Activities

The **recent meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology** featured several systematic review presentations including those by staff from OCSPP and ORD: Nate Mottl, Fran Branch, Becky Nachman, and Annette Guiseppi-Elie.

Strategies and Tools for Conducting Systematic Reviews of Mechanistic Data to Support Chemical Assessments

- The National Academies of Sciences, Engineering, and Medicine will be holding a workshop on December 10-11, 2018, in Washington, DC, on current state-of-the-art in performing systematic reviews of mechanistic data to support chemical assessments. A call for posters has been made with abstract deadline September 30. EPA abstracts have an extension to October 10. NCEA is coordinating the EPA posters so they can be submitted to NAS in one group. EPA will likely get about 10 poster slots in the session. Please let Emma Lavoie know if you are planning to submit and what your working title is by September 28th.

Partnership for Technology Innovation and the Environment Workshop on Environmental Protection, Artificial Intelligence, and Machine Learning

- September 21 8:45 am –4:30 pm at Kerwin Hall, Room 301, School of Public Affairs, American University, 4400 Massachusetts Avenue, NW, Washington, DC
- **RSVP**: Please respond to Norie Ogata at no4670a@student.american.edu

For additional contact information contact Dan Fiorino (dfiorino@american.edu) or Danielle Miller Wagner (djmwagner@american.edu)

One track of potential interest to systematic review and automation communities is on the **Application of AI Tools to Risk Assessment and Chemical Evaluations.** This track will assess opportunities and methodological challenges to applying AI to automate the risk assessment process. Specific examples may include:

- Speeding the review, extraction, and evaluation of structured and unstructured data from scientific and gray literature.
- Using data from one chemical (or group of chemicals) to inform the assessment on another substance including quantitative substance activity relationships (QSAR) and read-across approaches.
- Utilizing clusters or categories of chemicals to inform assessments.

Texas Commission on Environmental Quality (TCEQ) visit to EPA

- Jessica Myers and Sabine Lange from the Texas Commission on Environmental Quality (TCEQ) will visit EPA Headquarters October 9-10. The purpose of their visit is to share experiences on use of systematic review in chemical assessments.

- Tuesday, October 9th
  - Meeting with representatives from DoD and TSCA
  - Presentation to the Systematic Review Community of Practice from 3-4:30 PM.
- Wednesday, October 10th
  - Meeting with IRIS scientists including dialogue on study evaluation and approaches to synthesis and integration.

Fourth Annual International Collaboration for the Automation of Systematic Reviews (ICASR)

- Workshop to be held November 5-6, 2018, The Hague, The Netherlands.
- ICASR aims to coordinate efforts on tools automation and establish standards for automating the systematic review process by elucidating challenges, identifying current efforts, and informing priorities for collaboration to address interoperability among automated tools and automation of the process. Areas for focused discussions this year include performance standards for tools, validation of automated tools, and data management approaches.

NIST Text Analysis Conference (TAC) 2018

- November 13-14, 2018 in Gaithersburg, MD
- There are two tracks of potential relevance to the systematic review and automation communities:
  - **Drug-Drug Interaction Extraction from Drug Labels (DDI)**
    The purpose of the DDI track is to test various natural language processing (NLP) approaches for their information extraction (IE) performance on drug-drug interactions in Structured Product Labeling (SPL) documents.
  - **Systematic Review Information Extraction (SRIE)**
    The purpose of the SRIE track is to develop and evaluate Information Extraction (IE) approaches that can assist in the systematic reviews of environmental agents. This track will focus on IE of study design factors found in the Methods and Materials section of published studies of experimental animals exposed to environmental chemicals.

Ecological Evidence Exchange (EcoEvidEx) Trial Period

- On the week of September 10th, EcoEvidEx will be released for an initial trial period. EcoEvidEx is an initiative created by NCEA Scientists working in collaboration with researchers from Australia and the United Kingdom and the journal Freshwater Science, to encourage and improve the translation of research results into evidence that can help inform environmental management decisions. During the trial period, users will be testing and providing feedback on the EcoEvidEx data entry system. Additional information about EcoEvidEx is available at: https://freshwater-science.org/education-outreach/eco-evidence-exchange.

Publications of Interest

Machine Learning of Toxicological Big Data Enables Read-Across Structure Activity Relationships (RASAR) Outperforming Animal Test Reproducibility

Thomas Luechtefeld, Dan Marsh, Craig Rowlands and Thomas Hartung

Toxicological Sciences, Volume 165, Issue 1, 1 September 2018, Pages 198–212, https://doi.org/10.1093/toxsci/kfy152

This publication drew a lot of attention this summer and is likely of interest to those working in assessment science and new approach methodologies:

It Should Soon Be Easier to Tell a Chemical's Toxicity without Killing Animals

The Economist, 4 August 2018

Big data mining predicts toxicity better than animal tests

Britt Erickson

Chemical & Engineering News, Volume 96, Issue 29, 13 July 2018, Page 17, https://doi.org/10.1021/cen-09629-polcon5

Jobs - Please share these opportunities with your networks:

The Endocrine Disruptor Screening Program is identifying critical events within thyroid-related Adverse Outcome Pathways (AOPs) using a data mining literature screening approach to map out molecular initiating events (MIEs) and signaling pathways. To support this effort, OSCP is hiring two ORISE postdocs to advance systematic review.

- The first postdoc will learn about cutting edge tools and techniques for systematic reviews of scientific literature and development of alternative testing strategies (ATS)/new approach methodologies (NAMs).
- The second postdoc will gain a detailed understanding of thyroid-related adverse outcomes pathways, develop skills in artificial intelligence-based systematic reviews and learn about the development of strategies for chemical assessment using chemoinformatics, TOXCAST and TOX21.

NHEERL/MED has a post-doctoral position in Ecotoxicological Computational Biology. You can find more information here.

Next Meeting: October 9th, 2018
Texas Council on Environmental Quality (TCEQ)
More details to come!

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